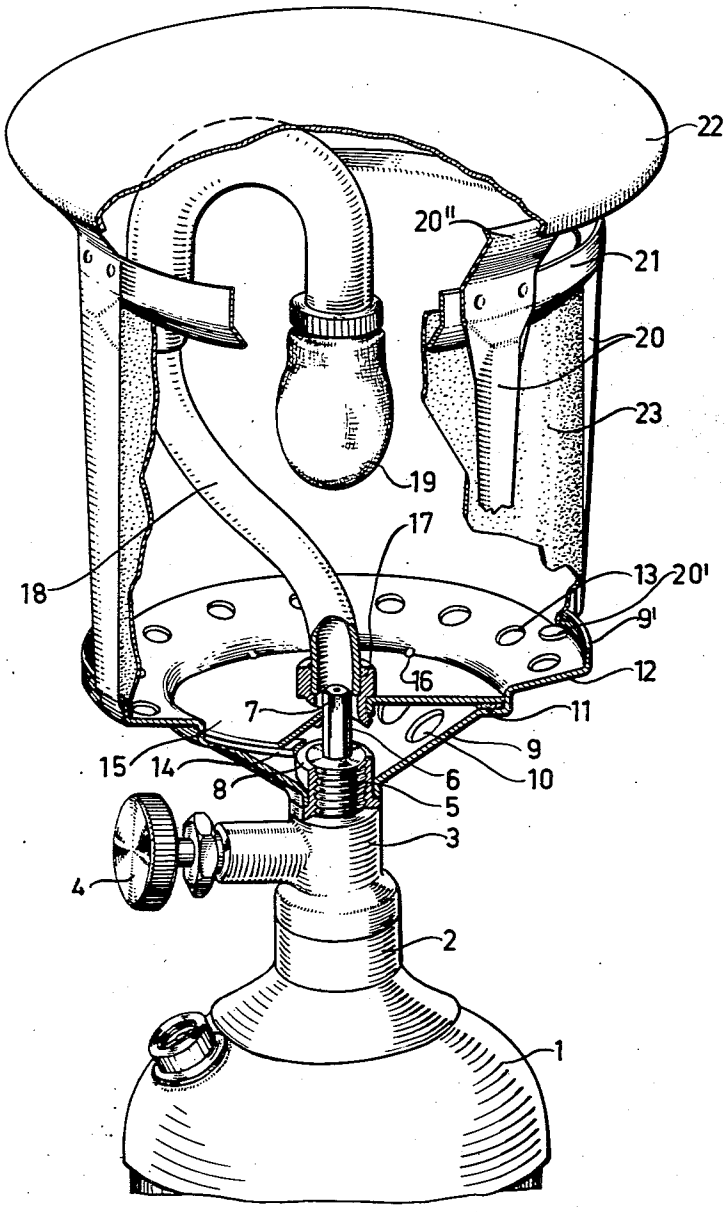
June 25, 1957 H. A. ÅKE WALLGREN 2,796,753

GASEOUS FUEL LAMP

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Fig. 1



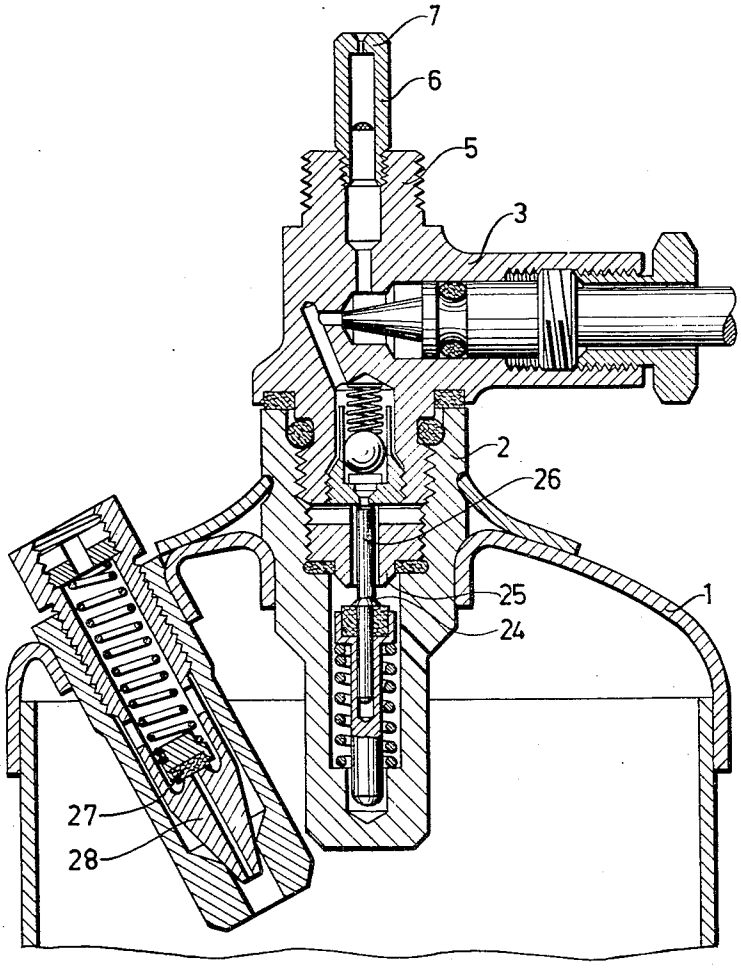
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Fig. 2



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GASEOUS FUEL LAMP

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5 Claims. (Cl. 67—88)

The present invention relates to a lamp or lantern employing a gaseous fuel, and more particularly to a lamp or lantern the fuel supply of which is stored, liquefied by pressure, in a closed container connected to the burner of the lamp by means of a connector member having a gas outlet extending into a mixing pipe which in turn leads to the burner.

With lamps or lanterns of the general kind above referred to, it is essential that the heat generated by the combustion of the fuel is prevented as much as possible from being conducted to the container. Conduction of the major part of the developed heat to the container will raise the pressure in the container which in turn causes feeding of an increased, undesirable and incalculable volume of gas to the burner. Such increased feeding of gas results in a corresponding increased development of heat which causes a still further increase of the pressure of the container whereby the pressure in the container is rapidly built up to a dangerous value. The combustion heat reaches the container through several channels. It is transmitted by conduction through the mixing pipe the respective end of which is by necessity secured to one of the parts supporting the lamp or lantern proper, and it is transmitted by radiation, especially when, as is frequently the case, the burner flame surrounded by the gas mantle is downwardly directed.

Accordingly, the principal object of the present invention is to provide a lamp of the general kind above referred to, the container of which is effectively protected from excessive heating by the burner.

Another object of the invention is to provide a lamp or lantern of novel and improved design which greatly reduces the transfer of the burner heat to the container thereby preventing an undesirable heating of the latter.

Still another object of the invention is to provide a lamp or lantern having a novel and improved design such that the major portion of the burner heat is deflected or dissipated before reaching the container thereby protecting the latter.

Other and further objects, features and advantages of the invention will be pointed out hereinafter and set forth in the appended claims forming part of the application.

In the figures of the accompanying drawings a preferred embodiment of the invention is shown by way of illustration and not by way of limitation.

The Figure 1 shows an isometric view, partly in section, of the upper part of a lamp according to the invention. Figure 2 is a vertical section through the container and a valve screwed into the top of the container.

The lamp comprises a fuel container 1, a connector member 2 fixed into the top of the container, a valve 3 screwed into connector 2 and operated by suitable means such as a hand wheel 4. The valve housing has an upper internally and externally threaded part 5 into which is screwed a mouthpiece 6 ending in an outlet nozzle 7 communicating with the interior of container 1. On the externally threaded part 5 of the valve housing is screwed

a bushing 8 which in turn receives the base 9 of the lamp. This base is fixedly secured to bushing 8 and is in form of a frusto-conical sheet metal member. The conical base faces downwardly and has circumferentially spaced apertures 10 in its side wall. The upper wide end of the base is set off to form a shoulder 11 and is continued in a ring 12, preferably slightly conical. Ring 12 is provided with circumferentially spaced apertures 13. Apertures 10 serve to admit the primary combustion supporting air into the lamp and apertures 13 to admit the secondary combustion supporting air. A solid ring 14 made of insulation material for instance asbestos is placed upon shoulder 11 and serves to support a solid disc 15. This disc is not fixedly joined to base 9, but merely rests on ring 11 and is loosely held in position by indentations 16 made after the insertion of the disc. The disc is provided with a central opening in which is fitted a bushing 17 to which is secured the lower end of a mixing pipe 18. The inner diameter of this pipe is wider than the maximum diameter of mouthpiece 6 which extends slightly into the end of the mixing pipe. This permits the primary combustion supporting air entering through apertures 10 to flow along the periphery of mouthpiece 6 into the mixing pipe in which it is mixed with gas flowing into the pipe through nozzle 7.

The mixing pipe is bent back upon itself and supports a downwardly directed burner which is surrounded by a lamp mantle 19.

A number of support strips 20 are secured to base 9 and support an upper ring 21 upon which is removably seated a curved cover plate 22. The lamp cylinder 23 is held in position within strips 20 and ring 21.

The base 9 is formed with an upstanding flange 9' having spaced apart slots which receive tabs 20' formed at the bottoms of vertical support strips 20, the tabs 20' being fixed to the base 9, as by spot welding, for example. From the region above ring 21, the strips 20 flare outwardly to form resilient spring clips 20'' having bent edges for resiliently holding in position the peripheral edge of the cover 22.

In the connector member 2 is inserted a valve member 24, cooperating with a valve seat 25, for closing the container 1, when the valve 3 is screwed away, for instance by refilling of the container 1. The valve member 24 is provided with a pin 26, which reaches above the valve seat 25 in such a manner that the valve member 24 opens when the housing of the valve 3 is screwed into the connecting member 2. 27 is a safety valve and 28 a manually operated gas outlet valve for facilitating the refilling of the container 1.

The lamp as hereinbefore described, functions as follows:

The heat generated by the burner at 19 is transmitted to disc 15 by conduction through the mixing pipe 18 and by direct radiation from the flame. The cool air entering as primary combustion supporting air into the space defined by disc 15 and frusto-conical base 9 flows along disc 15 thereby cooling the same. As a result of this cooling and the fact that disc 15 loosely rests upon the base and is separated therefrom by heat insulating ring 14, the conduction of heat between disc 15 and base 9 is materially reduced. Consequently the transfer of heat from the disc 15 to base 9, valve 3 and finally to container 1 is so low that a dangerous heating of the container 1 cannot occur.

While the invention has been described in detail with respect to a certain now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention, and it

is intended, therefore, to cover all such changes and modifications in the appended claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A gaseous fuel burning lamp with a depending burner and mantle, comprising, in combination, a closed fuel container for storing lamp fuel under pressure in liquefied form, a connector including a gas outlet secured to the top of the container, a mixing pipe supporting the depending burner and mantle on one end and supported on the other end by the connector encompassing the outlet thereof for feeding gas from the container into the mixing pipe and to the burner, a first shield in the form of a solid disc supported by said other end of the mixing pipe coaxially therewith, a second shield in the form of a perforated generally conical sheet metal member, the narrow end of said member being secured to said connector encompassing the same and the wide end of the member supporting the peripheral margin of said disc, the walls of said disc and of said conical member defining a chamber accessible to the ambient atmosphere through the perforations in said conical member, conduit means connecting said chamber with the end of the mixing pipe supported by the connector whereby, during operation of the lamp, combustion air is drawn into the mixing pipe through said chamber and said conduit means and positively guided along said disc for cooling the disc to impede the conduction of the burner heat to the connector and the container.

2. A lamp according to claim 1, wherein said second shield is shouldered to form a narrow peripheral support flange for the first shield.

3. A lamp according to claim 2, wherein a ring of heat insulating material is fitted upon said flange and said second shield rests upon said flange.

4. A lamp according to claim 1, wherein said conical shield member is peripherally continued at its wide end in a perforated generally frusto-conical wall portion having a shallower slant than the conical slant of said member, said wall portion being adapted to form a support for a lamp cylinder.

5. A gaseous fuel burning lamp with a depending burner and mantle, comprising, in combination, a closed fuel container for storing lamp fuel under pressure in liquefied form, a connector including a gas outlet secured to the top of the container, a mixing pipe supporting the depending burner and mantle on one end and supported on the other end by the connector encompassing the outlet end thereof with clearance for feeding gas from the container and air from the atmosphere into the mixing pipe and to the burner, a first shield in the form of a solid disc supported by said other end of the mixing pipe coaxially therewith, and a second shield in the form of a perforated generally conical sheet metal member, the narrow end of said member being secured to said connector encompassing the same and the wide end of the member supporting the peripheral margin of said disc, the walls of said disc and said conical member defining a chamber accessible to the ambient atmosphere through the perforations in the conical member and communicating with said clearance between the connector and the respective end of the mixing pipe whereby, during the operation of the lamp, combustion air is drawn into the mixing pipe through said chamber and said clearance and positively guided along said disc for cooling the disc to impede the conduction of the burner heat to the connector and the container.

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